

# PATENT ABSTRACTS OF JAPAN

(11)Publication number : 2000-132961

(43)Date of publication of application : 12.05.2000

(51)Int.Cl.

G11C 11/15

(21)Application number : 10-302354

(71)Applicant : CANON INC

(22)Date of filing : 23.10.1998

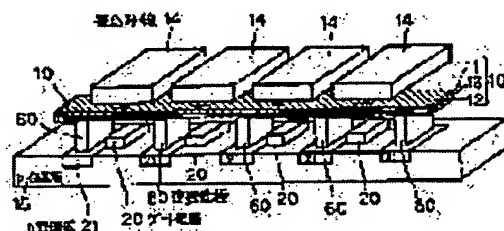
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## (54) MAGNETIC THIN FILM MEMORY, METHOD FOR READING OUT MAGNETIC THIN FILM MEMORY, AND METHOD FOR WRITING TO MAGNETIC THIN FILM MEMORY

(57)Abstract:

**PROBLEM TO BE SOLVED:** To reduce the number of wirings of a memory cell and simplify a structure by constituting a magnetic semiconductor hybrid of a field effect transistor and a magnetic resistor connected in parallel to the field effect transistor.

**SOLUTION:** Source electrodes and drain electrodes of adjacent MOSFETs are used as common electrodes. One contact hole for connecting a p type Si substrate 15 and a magnetic resistor 10 is enough for one memory cell. Two wirings, i.e., a write line 14 and a word line 20 connected to a gate electrode are enough to constitute one memory cell. There is no need of providing a field oxidation film area to separate memories. At the write time, a current is sent to the write line 14 and a right or left magnetic field is impressed to the magnetic resistor 10, whereby '0' or '1' digital information is written. An insulator is arranged between the magnetic resistor 10 and write line 14 to increase an intensity of the generated magnetic field, so that the information is surely written.



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## LEGAL STATUS

[Date of request for examination]

18.12.2002

[Date of sending the examiner's decision of rejection]

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number]

[Date of registration]

[Number of appeal against examiner's decision of